What is claimed is:

1. A method for retransmission of lost packet in a fading channel in a communications system including a transmitter and a receiver, wherein at the transmitter, after it receives a negative acknowledgement (NACK) pointed to a specific data packet from the receiver, the specific data packet is retransmitted with multiple copies, and a delay is inserted between two consecutive copies.

2. The method according to claim 1, wherein with said multiple copies, the number of multiple copies is acquired by calculation, based on the number of current retransmission of the specific data packet, and the number of multiple copies is also increased along with the increase of number of retransmissions.

3. The method according to claim 1, wherein provision of said number of multiple copies makes linear increase along with the number of retransmissions when said current retransmission of the specific data packet is i^{th} retransmission, and then the current number of copies of the specific data packet is i+1.

4. The method according to claim 1, wherein provision of said number of multiple copies makes exponential increase along with the number of retransmissions when said current retransmission of the specific data packet is i^{th} retransmission, and then the current number of copies of the specific data packet is 2^i.

5. The method according to claim 1, wherein said retransmission with inserting a delay between two consecutive copies of the specific data packet, further includes the following steps:

5   A. Setting at least two queues, including a transmission queue and a retransmission queue, at transmitter;

    B. Storing new data packets, which will be transmitted, in the transmission queue, and store copies of data packet, which will be retransmitted, in the retransmission queue;

    C. Determining whether the current retransmission queue is in the state of empty or not, if

10   the current retransmission queue is empty, then transmitting data packets in transmission queue with the first-in-first-out principle; and if the current retransmission queue is not empty, then transmitting the copies of data packet in the retransmission queue with interleaving transmission.

15 6. The method according to claim 5 wherein said transmitting the copies of data packet in the retransmission queue with interleaving transmission includes the steps of:

    Setting a minimum value for time length of an interleaving retransmission interval by timer;

    Selecting from retransmission queue one copy of every retransmission data packet, and

20 transmitting them in an interleaving retransmission interval time length with first-in-first-out principle; and

if within the minimum value of interleaving retransmission interval time length, all the one copy of every retransmission data packet have been transmitted, then with first-in-first-out principle, transmitting data packets in the transmission queue until the interleaving retransmission interval is ended by minimum value of interleaving

5   retransmission interval time length which is set by a timer.

7. The method according to claim 6, wherein if within the minimum value of interleaving retransmission interval time length, all of one copy of every retransmission data packet in retransmission queue have been transmitted, and the transmission queue is also empty, then

10   transmission is stopped until the minimum value, set by timer, of interleaving retransmission interval time length ends this interleaving retransmission interval.

8. The method according to claim 6, wherein when an interleaving retransmission interval ends, if retransmission queue is not empty, then a new interleaving retransmission is started

15   at interval transmission; and if retransmission queue is empty, then the interleaving retransmission is ended and the data packets in the transmission queue with first-in-first-out principle are transmitted.

9. The method according to claim 6, wherein said interleaving retransmission interval time

20   length should be longer than said minimum value of interleaving retransmission interval time length and at the same time, it should be larger than said maximum value of number

of different data packets in the retransmission queue.

10. The method according to claim 5, wherein with said data packet copies in retransmission queue, the same data packet copies are acquired by calculation, which are the retransmission copy numbers of the specific data packet, and stored in the copy queues according to the sequence number, each copy queue containing one copy of different data packets.

11. The method according to claim 5, wherein said step of interleaving retransmission of data packet copies in retransmission queue includes: starting from the first copy queue of retransmission queue, with first-in-first-out principle transmitting every data packet copy in each copy queue until the last copy queue; and when all the copy queues are empty, ending the interleaving transmission and start to transmit said transmission queue.

12. The method according to claim 11, wherein said transmitting every data packet copy in each copy queue is executed only when the current copy queue is empty, and then the next copy queue can be transmitted.

13. The method according to claim 11, wherein said transmitting until last copy queue, includes the copy queues without storing of a data packet copy.

14. The method according to claim 11, wherein in said copy queue, the copy queue number is equal to or greater than the number of retransmission copies of the specific data packet, which is acquired by calculation.

5　15. A method for retransmission of lost packet in a fading channel, in a communications system including a transmitter and a receiver, comprising the following steps:

    A. Setting at least two queues in the transmitter, including, transmission queue and a retransmission queue;

    B. Storing new data packets, which will be transmitted, in the transmission queue,

10   and storing the copies, the number of which are defined by current number of retransmission, in the retransmission queue;

    C. Determining whether the retransmission queue is in the state of empty or not, and when the current retransmission queue is empty, with first-in-first-out principle, transmitting data packets in transmission queue; and when the

15   current retransmission queue is not empty transmitting, the data packet copies in retransmission queue with an interleaving transmission;

    D. Setting the minimum value of time length of interleaving retransmission interval by a timer, selecting one copy of every retransmission data packet from retransmission queue, transmitting them in every interleaving

20   retransmission interval by the first-in-first-out principle;

    if before the end of an interleaving retransmission interval, one copy of every

retransmission data packet in retransmission queue has been transmitted, then with first-in-first-out principle, transmitting data packets in the transmission queue until the end of the minimum value, set by the timer, of the interleaving retransmission interval time length, and then, ending the interleaving

5 retransmission interval and starting next one interleaving retransmission interval; if before the end of the minimum value of interleaving retransmission interval time length, one copy of all data packets in retransmission queue has been transmitted and the transmission queue is empty, then stopping transmission until the end of minimum value, set by the timer, of the interleaving retransmission

10 interval time length, and then, ending the interleaving retransmission interval will be ended and starting the next interleaving transmission interval; and

when an interleaving retransmission interval is ended and the retransmission queue is empty, then transmitting data packets in the transmission queue by first-in-first-out principal.

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16. A method for retransmission of lost packets in a fading channel, in a communications system including a transmitter and a receiver, the method comprising the following steps::

A. Setting at least two queues in the transmitter, including a transmission queue and a retransmission queue;

20 B. Storing new data packets, which will be transmitted, in the transmission queue, and storing copies, the number of which are defined by current

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number of retransmission, in the retransmission queue;

C. Determining whether the retransmission queue is in the state of empty or not, and when the current retransmission queue is empty, with first-in-first-out principle, transmitting data packets in the transmission queue; and when the

5   current retransmission queue is not empty, transmitting the data packet copies in the retransmission queue with a multiple queue polling transmission;

D. Setting copy queues with sequence number, each copy queue including one copy of different data packet, starting from first copy queue, and with first-in-first-out principle, transmitting every data packet copy in each copy queue in

10   sequence, starting only after sending out all the copies in one queue the next copy queue transmission until the final copy queue, and when all the copy queues are empty, ending the polling transmission and starting the transmission of said transmission queue.

15   17. A method for retransmission of a lost packet in a fading channel, in a mobile communication system including a transceiver, comprising the steps of, transmitting by said transceiver a packet to a receiver or providing a plurality of copies of a special packet, when the transceiver receives information which indicates that the receiver does not receive the specific packet, and retransmitting by said transceiver the specific packet in

20   order at predetermined intervals.